

WHAT IS CLAIMED IS:

1. A semiconductor device comprising:
  - a semiconductor substrate;
  - 5 a first interlayer insulating film formed on the semiconductor substrate and having first contact holes;
    - first contact plugs each having a portion buried in one of the first contact holes and a portion protruded from the surface of the first interlayer film;
    - 10 sidewalls formed on the sides of the protruded portions of the first contact plugs;
      - a second interlayer insulating film formed on the first interlayer insulating film, the first contact plugs, and the sidewalls, and having second contact holes; and
      - 15 second contact plugs formed in the second contact holes and connected to the first contact plugs.
2. The semiconductor device according to claim 1, further comprising:
  - gate electrodes formed on the semiconductor substrate; and
  - 20 active regions formed in the surface of the semiconductor substrate in the vicinity of the gate electrodes;
    - wherein the first contact plugs are connected to the active regions, and the lateral width of the sidewalls is larger than the distance between the first contact plugs and the gate electrodes.
- 25 3. The semiconductor device according to claim 2, wherein the first contact plugs are the source lines or the drain lines of the memory cells of flash memories, and each of the gate electrodes comprises the control gate and the floating gate of the memory cells.
- 30 4. A semiconductor device comprising:
  - a semiconductor substrate;

a first interlayer insulating film formed on the semiconductor substrate and having first contact holes;

first contact plugs formed in the first contact holes and each having a downwardly convex funnel shape;

5 a second interlayer insulating film formed on the interlayer insulating film and the first contact plugs, and having second contact holes; and

second contact plugs formed in the second contact holes and connected to the first contact plugs.

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5. The semiconductor device according to claim 4, wherein the first contact plugs have portions buried in the first contact holes, and portions protruded from the surface of the first interlayer insulating film, and sidewalls are formed on the sides of the extruded portions  
15 of the first contact plugs.